Guidance for Calculating the Number of Animal Units in a Livestock Enterprise

Introduction

EQIP counts animal numbers as a function of animal units. Animal units are also used as the basis for estimating manure production and manure nutrient content. For the purposes of calculating animal units, an animal unit means 1,000 pounds of live weight of any given livestock species or any combination of livestock species.

Calculating Animal Units Numbers

Converting animal numbers into an equivalent number of animal units requires a knowledge of the weight of the animal. This may be the mature weight for some classes of animals (for example, a milking cow which maintains a relatively uniform weight throughout its production life), or the weight of the animal at the mid-point of the production cycle for other classes of animals (such as a finishing pig which may enter a production facility at 150 lbs. and leave at 220 lbs.). NRCS has developed conversion factors that facilitate converting animal numbers into an equivalent number of animal units.

Table 1 lists the number of live animals that are equivalent to an animal unit for most of the major animal species that are raised in a confinement situation and the corresponding average weight of the animal. These factors will be used directly to make conversions from animal numbers to animal units. While these computations are the same as those used for the design of agricultural waste storage/treatment facilities, it is not intended to be as detailed. Rather, animals should be divided into the categories shown in Table 1 and computations made for program considerations. States may develop other categories or use other average weights, however, every effort should be made to reach consistency across state and regional lines.

Using Table 1

Determine the number of animals in each category shown on the table. Divide the number of animals in an enterprise by the number of animals per 1000 lbs. animal unit (from Table 1) to determine the animal units. For operations that contain animals not shown in Table 1 or for which categories have not been established, determine the average weight of the animals, divide that average weight by 1000 lbs. to determine the number of animals per animal unit for each category. Then divide the number of animals in each category by the number of animals per animal unit for each category. Finally, total the animal units for all categories.

Example: Operation A is primarily a dairy operation with 300 milking cows, 50 replacement heifers and 50 calves (less than 2 months old). The farm also has two 20,000-bird broiler houses, and raises 500 rabbits, which average 4 lbs. each. Determine the total animal units:

300 milking cows ÷ 0.7 cows/a.u. (Table 1) = 429 a.u.

50 heifers ÷ 1.8 heifers/a.u. (Table 1) = 28 a.u.

50 calves ÷ 6.7 calves/a.u. (Table 1) = 7 a.u.

40,000 broilers / 455 broilers/a.u. (Table 1) = 88 a.u.

1000 lbs/a.u. ÷ 4 lbs/rabbit = 250 rabbits/a.u.
500 rabbits ÷ 250 rabbits/a.u. (calculated) = 2 a.u.

TOTAL 554 a.u.

TABLE 1

ANIMAL TYPE	APPROXIMATE AVERAGE ANIMAL WEIGHT (LBS)	NUMBER OF ANIMALS PER 1,000 POUND AU
BEEF		
Feeder	875	1.1
Calf	250	4
Breeding Stock	1000	1
DAIRY		
Mature Cow	1400	0.7
Heifer/Heifer Calf	550	1.8
Calf (0-2 months old)	150	6.7
Bull/Bull Calf	875	1.1
POULTRY		
Broiler	2.2	455
Layer	4	250
Pullet (<3mo. old)	2.2	455
Pullet (>3 mo. old)	4	250
Turkey On Feed	15	66.7
Turkey - Breeding Stock	20	50
SWINE		
Nursery Pig	50	20
Growing Pig	110	9.1
Finishing Pig	185	5.4
Gestating Sow	275	3.6
Sow and Litter	375	2.7
Boar	350	2.9

Counting Animal Units in a Livestock Enterprise for Determining Eligibility for Cost Share of Waste Storage/Treatment Facilities

When determining animal units of the participant's livestock enterprise for determining eligibility for cost share of waste storage/treatment facilities, the total number of animals confined at all locations of the participant's livestock enterprise will be used, not just the animals at the particular site of the proposed animal waste management facility. In the event animals are confined in several states which use different categories or different average weights, the calculations shall be made using the average weights and categories for the state where the storage/treatment facility is proposed regardless of where the animals are confined.

The following three-step process is used to determine the animal units associated with the livestock enterprise and whether they are confined livestock facilities.

1. Determine whether the participant operated one or more confined livestock facilities during the past twelve months.

   This may be accomplished by asking each participant whether or not they operated one or more confined facilities during the past 12 months. If the answer is no, the process stops at this point. If they answer yes, the process continues through steps two and three.

2. Determine the number of animals in the livestock enterprise raised in confinement.

   For participants who operated one or more confined animal facilities during the past twelve months, determine the number of animal raised in confinement.

   This can be done by having the participant document the maximum number of livestock confined for a total of 45 days or more during the past twelve month period. These numbers will be used for making the calculation of animal units.

   For facilities operated by the same participant, during only part of a year, the number of animals from two or more facilities are not added to determine the total number if the confinement periods are at different times. When confinement periods do not overlap, the number of animals at the largest facility is used. If the confinement periods for several facilities overlap, the number of animals at each of the overlapping facilities are added to determine the number of animal units.

3. Determine the total number of animal units in the confined livestock enterprise and whether the livestock enterprise meets the definition of "large".

The animal numbers identified in Step 2 are converted to their equivalent number of animal units using the appropriate conversion factors for each type of animal.

The number of animal units for each type of animal raised in confinement are added to determine the total number of animal units in the livestock enterprise.

If the total number of animal units in the confined livestock enterprise equals or exceeds the threshold for an animal type, the enterprise is considered large for that animal type.

In accordance with 515.96 (d), financial assistance is not available to construct an animal waste management facility on a large confined livestock operation. For EQIP, an animal waste management facility means a structural practice used for the storage or treatment of animal waste, including structures for both solids and liquids, waste treatment lagoons (aerobic, anaerobic, and mechanically aerated), oxidation ditches, and all appurtenant structures, equipment, and components used for collection and transfer of waste to the storage or treatment facility. Alleys, gutters, slatted floors, reception pits and associated pumps, gravity flow pipes and associated components (gates, valves, etc.), pushoff ramps, picket dams, drying/dewatering equipment, mechanical separation equipment, on-site manure composting facilities, settling basins, and fencing associated with the storage/treatment structure are all considered part of the waste management facility.

Financial assistance is available to establish components of a waste utilization system on a large confined livestock operation. Certain components used to remove or transport the waste from the storage or treatment facility to other locations where it is properly used and managed are considered part of the waste utilization system. These components could include permanently-installed pumps for emptying the facility or irrigation pipelines for applying the waste to land. The waste utilization system includes the plan that specifies the rates at which the waste will be applied to the land, and the practices that enable the application rates to be achieved. Composting facilities for the purpose of handling animal mortality and vegetative filters are also eligible on a large confined livestock operation.

This sample form may be used to document information for producers and for determining animal units on a livestock operation or enterprise.

Does the **total** number of **confined** animals owned or managed by your operation, in this state and other states, exceed (*the applicant's state definition of a large confined animal facility*) **animal units**? (You may need to calculate your total animal numbers below.)

☐ Yes ☐ No

Total number of confined animals is the sum of the maximum number of animals confined for 45 days or more during the past 12-month period in all facilities owned or managed by the applicant.

Confined animals are held for a total of 45 days or more in any 12 month period in a livestock facility that stables, feeds, confines, or maintains the animals in an area that does not sustain crops, vegetation, forage growth, or post harvest residue.

An **animal unit** means 1,000 pounds of live weight of any livestock species or any combination of livestock species.

If **YES**, how many animals of each type do you have confined on your operations and in which states are these animals confined?

Animal Type	Animal Number	State Located	Number of Animals per Animal Unit	Animal Units
			Total Animal Units =	

Sample Confined Livestock Operation Size Distribution

California Dairies

Source: 1992 Census of Agriculture

(Farms with more than 10 milk cows)

Size class distribution greater then 1,000 milk cows estimated from 1995 DHIA data)

Size Class, No. of AUs	Number of Farms	% of all Farms	Estimated No. of AUs on Dairies	% of all Dairy AUs
18 to 35	55	2	1,242	0
36 to 89	71	3	3,969	0
90 to 179	162	7	21,019	1
180 to 359	321	14	83,284	4
360 to 899	887	37	508,747	23
900 to 1,700	566	24	703,872	31
1,800 to 3,599	282	12	687,987	31
>3,600	42	2	235,204	11